

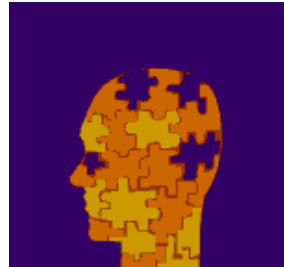
ADOLESCENT BRAIN DEVELOPMENT & JUVENILE JUSTICE¹

During the past few years, research has revealed that significant development of the brain occurs between childhood and adulthood.

Understanding adolescent brain development is crucial to examining prevention and intervention services for youth. The United States Supreme Court has even recognized the importance of brain research relying on it to issue its landmark decision in *Roper v. Simmons*, outlawing the death penalty for offenders who committed crimes when they were under the age of 18.²

The Brain Continues to Develop into Adulthood and Undergoes Dramatic Changes During Adolescence

Previously, it was thought that most brain development was complete by adolescence and that teenagers' brains were as fully matured as adult brains. As the result of increasingly sophisticated research and imaging abilities, we now know this is not the case.³ In fact, **adolescents' brains continue to grow and mature into**



their mid-20s.⁴ Brain imagery confirms that adolescence is a period of gradual development and that youth are not fully mature in their judgment, problem-solving or decision-making abilities.⁵

The pre-frontal cortex, responsible for the characteristics of adult behavior, such as impulse control, the regulation of emotions and moral reasoning, is the last part of the brain to mature.⁶ There is emerging evidence that the processing of emotional and social information is affected by hormonal changes of puberty in ways that make young people more sensitive to the reactions of others.⁷ This means that even as their brains develop and their cognitive abilities mature, adolescents continue to display psychosocial immaturity.⁸ They are more prone to peer pressure, tend to focus on reward over risk, act impulsively, and

think about the present instead of being future oriented.⁹

Brain Immaturity Can Translate into Poor Decision-Making and Negative Behaviors

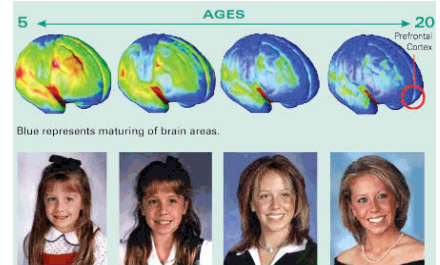


Image from: The National Institute on Drug Abuse, Research Report Series Comorbidity: Addiction and Other Mental Illnesses

The brain development research confirms the distinction between youth and adults is not simply one of age and that adolescents make choices shaped by their levels of cognitive and psychosocial development. Although the cognitive functioning of most adolescents approaches that of adults, the brain immaturity described above means that many adolescents are not as capable as adults in weighing long-term consequences assessing level of risk involved.¹⁰ Thus, brain immaturity can often result in unwise, unsafe and even illegal behaviors that a youth would “know better” to do as an adult or have the capacity to say “no” to his friends.

Juvenile Justice Policy Implications

Brain research is already being utilized by stakeholders in developing youth-based policies.

For example, the insurance industry has lobbied based on this research to change driving laws in order to give adolescents' brains time to mature as completely as their bodies.¹¹ Scientific research does not go so far as to assert that adolescents cannot distinguish right from wrong or that they should be exempt from punishment. Rather, brain research supports the need to consider the developmental stage of youth in designing juvenile justice

systems and requires differential responses to youth than adults.¹² As a society, we have recognized the limitations of adolescents' decision-making capacity and accordingly have withheld certain duties, rights and privileges until they are adults under the law (e.g.

Applying adult models of criminal justice to delinquent youth is inappropriate, at best, and insufficient and negligent, at worst, as adolescents' neurodevelopment is still in process and not yet fully developed as an adult brain.

Blue Ribbon Task Force,
Transforming Juvenile Justice in

eligibility for military service, voting, and alcohol consumption).¹³

First, as any parent knows and the scientific and sociological studies ...tend to confirm, a lack of maturity and an underdeveloped sense of responsibility are found in youth more often than in adults and are more understandable among the young. ... It has been noted that adolescents are overrepresented in virtually every category of reckless behavior. ... In recognition of the comparative immaturity and irresponsibility of juveniles, almost every state prohibits those under 18 years of age from voting, serving on juries, or marrying without parental consent.

It is logical then that our juvenile justice system should also reflect that youths' brains, like their bodies, are not mature. Indeed, the U.S. Supreme Court outlined three "general" differences between adults and juveniles under age eighteen. Juveniles are relatively more (1) immature and irresponsible; (2) vulnerable to negative pressures from their peers and environment; and (3) fragile and unstable in their identities.¹⁴ There will always be some youth who have exhausted the resources of the community and juvenile justice system and whose risk level warrants long-term placement in the custody of the Ohio Department of Youth Services (ODYS). However, these represent only a very small percentage of delinquent youth. Research shows that harsh punishment in adult or adult-like facilities increases the probability of future violent crimes. In fact, most youngsters who commit criminal offenses will abandon

illegal behavior as they enter adulthood.¹⁵ Adolescence is a time where youth can be treated and learn to change their negative decision-making and behavior. Therefore, Ohioans should work to:

- **Examine each point of contact or interaction with adolescents** to ensure that developmentally appropriate and individualized responses are in place along a continuum of care that assists with the prevention, intervention and rehabilitation of delinquent youth.
- **Incorporate current brain research into treatment strategies** with an ultimate goal of balancing positive outcomes for youth with public safety and individual accountability.
- **Restore judicial discretion** in order to respond to juvenile offenders as youth instead of adults by removing mandatory circumstances for both transfer to adult court and sentencing to ODYS.
- **Increase developmentally-appropriate services** that address the unique physical and mental health needs of youth including creating a supportive family or community environment.¹⁶
- **Afford opportunities** to youth where brain functions can be exercised (such as valuing skills, decision-making, and analytical skills) **in a low-risk environment that allows them to make mistakes.**¹⁷

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¹ Various fact sheets previously developed on this subject were relied upon by author to create this document.

² *Roper v. Simmons*, 543 U.S. 551 (2005).

³ Sowell, Elizabeth R., et al., *Mapping continued brain growth and gray matter density reduction in dorsal frontal cortex: inverse relationships during postadolescent brain maturation*, JOURNAL OF NEUROSCIENCE 21(22) 8819-29 (2001).

⁴ Juvenile Defense Network, Lawyers Helping Lawyers Helping Kids, *Adolescent Brain Development: Understanding the Parts of the Brain* <http://www.youthadvocacyproject.org/pdfs/Brain%20Mailing.pdf>; Ramowski, Sarah K. and Nystrom, Robert J., *The Changing Adolescents Brain*, Northwest Public Health 24 (Spring/Summer 2007). http://www.nwpublichealth.org/docs/nph/s2007/brain_s2007.pdf; and Gardner, M., & Steinberg, L., *Peer influence on risk-taking, risk preference, and risky decision-making in adolescence and adulthood: An experimental study*, DEVELOPMENTAL PSYCHOLOGY 41, 625-635 (2005).

⁵ Coalition for Juvenile Justice, *Emerging Concepts Brief: What Are the Implications of Adolescent Brain Development for Juvenile Justice?*, Coalition for Juvenile Justice & Office of Juvenile Justice Delinquency Prevention (2006).

⁶ Fagan, Jeffrey, *Adolescents, Maturity, and the Law, Why science and development matter in juvenile justice*, THE AMERICAN PROSPECT (August 14, 2005); National Institute of Mental Health *Teenage Brain: A Work in Progress (Fact Sheet): Brief overview of research into brain development during adolescence* (2001).

⁷ Nelson, Eric, E., et al., *The social re-orientation of adolescence: A neuroscience perspective on the process and its relation to psychopathology*, PSYCHOLOGICAL MEDICINE 35, 163-174 (2005).

⁸ See, Juvenile Defense Network at *supra* note 4.

⁹ Steinberg, Scott L., *Less Guilty by Reason of Adolescence: Developmental Immaturity, Diminished Responsibility, and the Juvenile Death Penalty*, AMERICAN PSYCHOLOGIST 58(12) 1009-18 (Dec. 2003).

¹⁰ Steinberg, Laurence and Haskins, Ron, *Keeping Adolescents Out of Prison*, The Future of Our Children, Policy Brief, Future of Children (Fall 2008); and see Juvenile Defense Network, at *supra* note 4. www.futureofchildren.org/usr_doc/FOC_Brief_Summer08.pdf

¹¹ Allstate, *Why do most 16-year-olds drive like they're missing a part of their brain? Because They Are* at <http://www.allstate.com/content/refresh-attachments/Brain-Ad.pdf> (citing research to show why 16 year-old drivers have crash rates three times higher than 17 year-olds and five times higher than 18 year-olds. Is there a way for teens to get their driving experience more safely).

¹² McArthur Foundation, *Less Guilty by Reason of Adolescence, Issue Brief 3, Adolescent Development and Juvenile Justice* http://www.adjj.org/downloads/6093issue_brief_3.pdf

¹³ Juvenile Justice Center, *Cruel and Unusual Punishment: The Juvenile Death Penalty, Adolescence, Brain Development and Legal Culpability* American Bar Association (Jan. 2004). <http://www.abanet.org/crimjust/juvjus/Adolescence.pdf>

¹⁴ *Supra* note 2 at 569-704

¹⁵ *Supra* note 11; Coalition for Juvenile Justice, *Childhood on Trial: The Failure of Trying and Sentencing Youth as Adults* (2005).

¹⁶ The Annie E. Casey Foundation, *Small is Beautiful: Missouri Department of Youth Services*. AdvoCasey Vol.5(1) (Spring 2003).

¹⁷ See, *The Changing Adolescents Brain* at *supra* note 4.